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SECTION A - SUPPLEMENTAL INFORMATION

Modification P00004, W56HZV-05-C-0254

1. The purpose of this modification is to change contractors address, add scope under Phase II Plus funding, change the Contract Specialist, and notify contractor of clause updates and additions. Modification P00003 has been cancelled and will not be used for this contract.

2. The following changes are made to the contract:

a. Block 8 of SF 30 changed to reflect contractor new address:

From:	To:
Boston Dynamics, Inc.	Boston Dynamics, Inc.
515 Massachusetts Avenue	78 Fourth Avenue
Cambridge, MA 02139-4018	Waltham, MA 02451-7507

b. Section B, CLIN 0004 is added to provide funding in the amount of \$499,951.70:

Est. Cost:	\$462,918.24
Fee:	<u>\$37,033.46</u>
Total Amount:	\$499,951.70

Section B.3.2:

Funding Schedule changed to reflect 1 June 07 through 1 June 08 peroid

Peroid of perfomance changed from 19 May 06 through 18 May 07 to 19 May 06 through 31 May 07.

Section B.4, text is changed to read, The amount of funds currently obligated against this contract is \$1,229,951.70.

c. Section C, Notification of changes to Scope:

C.2 Changed required performance tasks from C.2.1-C.2.6 to C.2.1-C.2.8.

C.2.3 Changed required parameters from 12 to 14 required parameters.

C.4.3 Changed TACOM testing date from 22 months after contract award to 34 months after contract award.

C.5.4 Changed Final Review from 24 months after contract award to 34 months after contract award.
Changed required performance parameters from 12 to 14.

C.6.1 Changed Contract Progress Status and Management Reports from 6 per year X 2 years = 12 reports to 6 per year X 3 years = 18 reports.

C.6.7 Changed delivery of software listed in C.6.7.1 -C.6.7.3 to TACOM from 24 months to 36 months after contract award. Changed delivery POC from Henry J. Andrusz to Paul Muench.

Scope added:

C.1.1 Since creation of the Big Dog in fall of 2004, tens of hours have been logged in the form of walking, climbing, and running time. Big Dog has walked up and down 35 degree inclines, trotted at speeds up to 1.8 m/s, walked over loose rocks and carried over 150 lb of payload.

C.2.7 The contractor shall add a muffler to the power system for Robotic Mule. A commercial off the shelf (COTS) item may be used, but it must reduce the decibel level of the Robotic Mule to 70-75 dB at 6 ft.

C.2.8 The contractor shall review less expensive commercial alternatives to the current MOOG hydraulic valves. The contractor shall purchase and bench test the alternative valves for possible use on the Robotic Mule as part of this assessment. The contractor shall provide recommendations based on the

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degree of performance degradation in relation to the cost and savings. The contractor shall provide a report of this cost analysis as soon as the information is available in one of the Management Reports or in the Final Technical Report.

C.3.1.13 Development of heavy load carrying capability: The contractor shall expand the types of terrain the Robotic Mule can traverse while carrying payloads of 150-200 lbs. This will include inclined and rocky terrain typical of mountain paths. It is desired that for demonstration purposes, this payload be a decommissioned mortar or similar military equipment.

C.3.1.14 Development of soldier following capability: The contractor shall develop and test sensor systems and software to enable the Robotic Mule to track and follow a soldier. These systems shall simplify navigation of the robot through difficult terrain. The contractor will explore the use of various sensor systems including stereo vision-based systems, GPS systems & encrypted friend/foe beacons worn by the soldier. The use of a non-powered tether will be considered as well.

C.4.3.1 The contractor shall conduct up to three days of live robot system testing demonstrating advances resulting from Phase II Plus at Ft. Benning, GA. This will involve a team of up to 10 contractor personnel to travel with the Robotic Mule (and logistical equipment/support) to the test location. The contractor will be required to conduct and document the testing. The contractor will be responsible for providing all the technical expertise, logistical, and support activities (including spare parts) necessary to conduct the demonstration. The specific date shall be determined after concurrence by the COR that successful completion of scheduled test at Quantico, VA has occurred.

Section C, Clause added:

52.237-4000 Contractor Manpower Reporting

d. Section F, Notification of changes to Deliveries Or Performance

F.1.1 Changed period of performance from 24 months to 36 months.

F.2.1 Changed Contractor's Progress, Status and Management Reports from (6 per year X 2 years = 12 reports) to (6 per year X 3 years = 18 reports).

F.2.3 Changed draft final report due date from 22 months to 34 months.

F.4.3 Changed delivery POC from Henry J. Andrusz to Paul Muench.

e. Section G, updated to show increase in the total contract amount is increased by \$499,951.70 from \$730,000.00 to \$1,229,951.70.

f. Section H, Notification of changes to Special Provisions

H.1.2, Special Provisions, a statement regarding matching funds is added.

g. Section I, Clause update

52.222-35 Equal Opportunity
52.244-6 Subcontracts for Commercial Items

h. Section J, Changes

Exhibit A, Data items A001-A007 of CDRLs DD Form 1423, the Contract Specialist is changed from Sherri Henderson to Michael Chaney.

Block 16a, Data items A001 and A003 of CDRLs Form 1423, revised to reflect current scope delivery requirements.

3. The following list identifies clauses updated or added under previous modifications:

252.211-7003	Updated
252.225-7001	Updated
252.225-7004	Updated
252.225-7013	Updated
252.226-7001	Updated
252.225-7003	Updated
52.246-4026	Updated
52.203-6	Added
52.203-12	Updated
52.209-6	Updated
52.215-18	Updated
52.222-4	Updated
52.222-19	Updated
52.222-35	Updated
52.222-37	Updated
52.225-13	Updated
252.211-7005	Updated
252.225-7014	Updated
252.225-7016	Updated
252.225-7025	Updated
252.225-7031	Updated
252.244-7000	Updated
52.204-7	Updated
52.244-6	Updated
252.225-7015	Updated

4. All other terms and conditions remain the same.

*** END OF NARRATIVE A 0004 ***

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ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT									
0004	<div>SECTION B - SUPPLIES OR SERVICES AND PRICES/COSTS</div> <div><div>SERVICES LINE ITEM</div><div>NOUN: PHII PLUS BOSTON DYNAMICS SECURITY CLASS: Unclassified PRON: R372C070R3 PRON AMD: 01 ACRN: AC AMS CD: 665502M4000 Contractor shall furnish all the supplies and services to accomplish the task specified in Section C Scope of Work. Est. Cost: \$462,918.24 Fee: <u>\$37,033.46</u> Total Amount: \$499,951.70 <div>(End of narrative B001)</div> <div>Inspection and Acceptance</div><div>INSPECTION: Destination ACCEPTANCE: Destination</div> <div>Deliveries or Performance</div><table><tr><td>DLVR SCH</td><td></td><td>PERF COMPL</td></tr><tr><td><u>REL CD</u></td><td><u>QUANTITY</u></td><td><u>DATE</u></td></tr><tr><td>001</td><td>0</td><td>01-JUN-2008</td></tr></table><div>\$ 499,951.70</div></div></div>	DLVR SCH		PERF COMPL	<u>REL CD</u>	<u>QUANTITY</u>	<u>DATE</u>	001	0	01-JUN-2008				\$ <u>499,951.70</u>
DLVR SCH		PERF COMPL												
<u>REL CD</u>	<u>QUANTITY</u>	<u>DATE</u>												
001	0	01-JUN-2008												

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B.1 ESTIMATED COST AND PAYMENT

B.1.1 The estimated cost for performance of the work required under this contract is \$1,229,951.70 and shall constitute the estimated cost for the purpose of the Contract Clause in Section I entitled "Limitation of Funds" (FAR 52.232-22).

B.1.2 Allowable cost shall be determined, and payment thereof shall be provided, in accordance with the Contract Clause in Section I entitled "Allowable Cost and Payment" (FAR 52.216-7).

B.2 PAYMENT

The contractor may submit public vouchers every two weeks for payment under this contract.

B.3 FUNDING

B.3.1 The Government shall provide funds under this contract covering the estimated cost and fixed fee hereof on an incremental basis as provided for in the following funding schedule and pursuant to the Contract Clause in Section I entitled "Limitation of Funds" (FAR) 52.232-22). It is estimated that the incremental amounts are sufficient for the performance of work in each of the cited periods. The Government may, at its discretion, allot such funds on an incremental basis within each fiscal year. The contractor shall so plan and execute the work required by this contract as to expend and/or commit funds compatible with the schedule set forth below. Whenever the contractor has reason to believe that the funds allotted to this contract for any fiscal year are either insufficient or excessive for the performance of work required in that fiscal year, the Government shall be so notified.

B.3.2 FUNDING SCHEDULE

<u>Performance Period</u>	<u>Amount</u>
Date of Award through 18 May 06	\$ 365,000.00
19 May 06 through 31 May 07	\$ 365,000.00
1 June 07 through 1 June 08	\$ 499,951.70

B.4 FUNDS ALLOTTED

The amount of funds currently obligated against this contract is \$1,229,951.70. This contract is now fully funded. (added on Mod P00004)

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SECTION C - DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

<u>Status</u>	<u>Regulatory Cite</u>	<u>Title</u>	<u>Date</u>
C-1 ADDED	52.237-4000 (TACOM)	CONTRACTOR MANPOWER REPORTING (CMR)	FEB/2007

The Office of the Assistant Secretary of the Army (Manpower & Reserve Affairs) operates and maintains a secure Army data collection site where the contractor will report ALL contractor manpower (including subcontractor manpower) required for performance of this contract. The contractor is required to completely fill in all the information in the format using the following web address: <https://cmra.army.mil> . The required information includes the following:

- (1) Contracting Office, Contracting Officer, Contracting Officer's Technical Representative;
- (2) Contract number, including task and delivery order number;
- (3) Beginning and ending dates covered by reporting period;
- (4) Contractor name, address, phone number, e-mail address, identity of contractor employee entering data;
- (5) Estimated direct labor hours (including sub-contractors);
- (6) Estimated direct labor dollars paid this reporting period (including sub-contractors);
- (7) Total payments (including sub-contractors);
- (8) Predominant Federal Service Code (FSC) reflecting services provided by contractor (and separate predominant FSC for each sub-contractor if different);
- (9) Estimated data collection cost;
- (10) Organizational title associated with the Unit Identification Code (UIC) for the Army Requiring Activity (the Army Requiring Activity is responsible for providing the contractor with its UIC for the purposes of reporting this information);
- (11) Locations where contractor and sub-contractors perform the work (specified by zip code in the United States and nearest city, country, when in an overseas location, using standardized nomenclature provided on website);
- (12) Presence of deployment or contingency contract language; and
- (13) Number of contractor and sub-contractor employees deployed in theater this reporting period (by country).

As part of its submission, the contractor will also provide the estimated total cost (if any) incurred to comply with this reporting requirement. Reporting period will be the period of performance not to exceed 12 months ending September 30 of each government fiscal year and must be reported by 31 October of each calendar year.

[End of Clause]

Scope of Work

C.1 Background Information: The Defense Advanced Research Projects Agency (DARPA) recently awarded a \$4.2 million dollar contract to Boston Dynamics Inc (BDI) for a "BigDog Robot", a quadrupedal walking robotic system. The BigDog Robot is a demonstration platform that shows the proof of principle for a walking quadrupedal robot. This contract will use the BigDog design as a basis for building, designing testing and demonstrating the Legged Robotic Mule, hereafter referred to as the Robot Mule. The Robotic Mule is an enhanced BigDog Robot capable of carrying a payload equal to 25.0% of the Robotic Mule's total body weight and following a dismounted soldier over various terrains.

C.1.1 Since creation of the Big Dog in fall of 2004, tens of hours have been logged in the form of walking, climbing, and running time. Big Dog has walked up and down 35 degree inclines, trotted at speeds up to 1.8 m/s, walked over loose rocks and carried over 150 lb of payload.

C.2 Using the "Big Dog" design as a baseline, the contractor shall design and build a robotic mule, including the necessary subsystems for untethered operation. Specifically, but not exclusively, the subsystems shall provide power, hydraulics/actuation, computer vision, control computer (operator control unit), sensor electronics, communications, body chassis and stabilized sensor platform(s). The contractor shall meet the required performance parameters listed in C.3.1 and perform the tasks listed in C.2.1-C.2.8 below:

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- C.2.1 The contractor shall develop a draft design for a Robotic Mule and subcomponents needed to meet the performance parameters. At the design concept meeting listed in C.5.2, the contractor shall submit the draft design to the COR for review and concurrence.
- C.2.2 Develop dynamic control of the robotic mule for foothold location and balanced walking on narrow and/or steep paths defined as up to 30 inches wide and inclines and declines of at least 25 degrees.
- C.2.3 Modify and improve the existing "Big Dog" power system as needed to provide sufficient power to meet the 14 required parameters listed in C.3.1.
- C.2.4 The Contractor shall integrate the subsystems and components into the Robotic Mule to ensure they interface correctly and they are ready for integration into a complete Robotic mule system.
- C.2.5 The Contractor shall deliver the final design to the COR, and demonstrate the Robotic Mule meets the first 4 of the required performance parameters.
- C.2.6 The Contractor shall validate that all of the components and subsystems of the Robotic Mule interface and operate properly as a complete system.
- C.2.7 The contractor shall add a muffler to the power system for Robotic Mule. A commercial off the shelf (COTS) item may be used, but it must reduce the decibel level of the Robotic Mule to 70-75 dB at 6 ft.
- C.2.8 The contractor shall review less expensive commercial alternatives to the current MOOG hydraulic valves. The contractor shall purchase and bench test the alternative valves for possible use on the Robotic Mule as part of this assessment. The contractor shall provide recommendations based on the degree of performance degradation in relation to the cost and savings. The contractor shall provide a report of this cost analysis as soon as the information is available in one of the Management Reports or in the Final Technical Report.
- C.3.0 Required Physical and Performance Characteristics: The Robotic Mule is required to meet the 12 physical and performance characteristics listed in C.3.1. Also, if possible, contractor should attempt to meet the 3 desired parameters listed in C.3.2. The required and the desired parameters are listed below.
- C.3.1 Required Parameters:
- C.3.1.1 Demonstrate position control, posture control, and disturbance rejection of body posture using coordinated joint-level force control.
- C.3.1.2 Demonstrate compliant posture control and accommodation of irregular terrain.
- C.3.1.3 Accommodate a minimum range of motion necessary for stepping up, down, extending and retracting for ground clearance.
- C.3.1.4 Include compliant elements that provide sufficient shock absorption, stable interaction with the ground, and force control performance to achieve a smooth and reliable walking gait.
- C.3.1.5 Carry a payload equal to 25% of the Robotic Mule's total body weight.
- C.3.1.6 Walk at speeds greater than or equal to 4 mph (1.8 m/s) for at least 2 hours on a hard packed level terrain.
- C.3.1.7 Demonstrate the ability to walk on rough terrain including inclines, declines, and obstacles representative of a narrow mountain trail.
- C.3.1.8 Demonstrate the capability of assisted autonomy by having the Robotic Mule be led around and through obstacles by the soldier leader using a control tether either wireless or wired to the robot.
- C.3.1.9 Develop legs and actuators optimized for load carrying capacity on rough terrain including inclines, declines, and obstacles representative of a narrow mountain trail (as defined in C.2.2) and demonstrate a stable pace and trot walking gaits.
- C.3.1.10 The Robotic Mule shall employ the existing "BigDog" computer Ovision system hardware and software to track markers on the feet or footfall designators for the feet and achieve walking with designated foot placement. The vision and odometry system shall be modified as necessary to identify and find designated footholds selected by a "soldier leader" (robotic mule following the soldier's path). The software shall identify markers, track foot placement, and identify terrain slope parameters necessary for posture control.

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C.3.1.11 Run or trot at least 8mph (3.6 m/s) for at least 100 meters on level ground.

C.3.1.12 Demonstrate the ability to maintain a preset line of sight distance from the soldier leader.

C.3.1.13 Development of heavy load carrying capability: The contractor shall expand the types of terrain the Robotic Mule can traverse while carrying payloads of 150-200 lbs. This will include inclined and rocky terrain typical of mountain paths. It is desired that for demonstration purposes, this payload be a decommissioned mortar or similar military equipment.

C.3.1.14 Development of soldier following capability: The contractor shall develop and test sensor systems and software to enable the Robotic Mule to track and follow a soldier. These systems shall simplify navigation of the robot through difficult terrain. The contractor will explore the use of various sensor systems including stereo vision-based systems, GPS systems & encrypted friend/foe beacons worn by the soldier. The use of a non-powered tether will be considered as well.

C.3.2 Desired Parameters:

C.3.2.1 Run or trot at least 22mph (10.0 m/s) for at least 200 meters on hard packed level terrain.

C.3.2.2 Upon electronic command, demonstrate the ability to adjust the preset distance between the robotic mule and the soldier leader.

C.3.2.3 Demonstrate the ability of the Robotic Mule to deviate from the path and approach the soldier leader directly (line of sight).

C.4. Testing Requirements:

C.4.1 Component Testing: The contractor shall conduct component physical testing (Hot Bench Testing) to ensure that all of the components and subsystems are operational and ready for integration into a final design complete system as listed in C.2.5. This testing shall be conducted at the contractor's facility no later than (NLT) 8 months after contract award.

C.4.2 Demonstration Test I of Live Robot:

The contractor shall conduct live robot testing at the contractor's facility no later than (NLT) 15 months after contract award to demonstrate the following:

C.4.2.1 All of the components and subsystems of the Robotic Mule interface and operate properly as a complete system as listed in C.2.6.

C.4.2.2 The Robotic Mule meets the first 4 parameters listed in C.3.1 and demonstrate the ability to walk.

C.4.3. Demonstration Test II of Live Robot: The contractor shall conduct live robot system testing to meet all of the required parameters listed in C.3.1. This testing shall be conducted at TACOM in Warren MI no later than (NLT) 34 months after contract award.

C.4.3.1 The contractor shall conduct up to three days of live robot system testing demonstrating advances resulting from Phase II Plus at Ft. Benning, GA. This will involve a team of up to 10 contractor personnel to travel with the Robotic Mule (and logistical equipment/support) to the test location. The contractor will be required to conduct and document the testing. The contractor will be responsible for providing all the technical expertise, logistical, and support activities (including spare parts) necessary to conduct the demonstration. The specific date shall be determined after concurrence by the COR that successful completion of scheduled test at Quantico, VA has occurred.

C.5.0 Reviews: The Contractor shall conduct the reviews listed in C.5.1- C.5.4. The reviews shall be held at the Contractors facilities in Boston MA, at TACOM in Warren MI, or via Tele-Conferences (Subject to the COR concurrence). Approximately 2 people and 2 trips to TACOM will be required in the first year. Also, one trip to TACOM for live testing and demonstration of the robot is estimated for the final review. This trip will involve a team of 6 or 7 contractor personnel to travel with the Robotic Mule (and logistical equipment/support) to be tested at TACOM. The contractor's presentations shall use Microsoft Power Point compatible with Office 2000. Also, each review listed in C.5.1 - C.5.4 shall be completed sequentially and is subject to the COR review and concurrence before contractor implementation and progression to the next review.

C.5.1 Start of Work Meeting

The Start of Work meeting shall commence no later than (NLT) 30 days after contract award or as mutually agreeable with the COR.

At this meeting, the contractor shall present and brief the COR on their planned approach to complete the contract effort.

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The contractor shall provide recommendations and discuss trade-offs of various methodologies and a provide plan of action on how they will arrive at draft system parameters. The contractor shall coordinate with the Contracting Officer's Representative (COR) to schedule a specific date and time.

C.5.2 Design Concept Review (DCR):
(NLT) 3 months after contract award, the DCR will be conducted at the contractor's facility. Contractor shall demonstrate and deliver the draft design concept for the robotic mule to the COR for review and concurrence as listed in C.2.1. This effort may include sketches, drawings and modeling and simulation.

C.5.3 Critical Design Review (CDR):
NLT 12 months after contract award, the Contractor shall present the final design of the Robotic Mule to the COR at the contractor's facility. At the design review, the Contractor shall demonstrate that the Robotic Mule successfully operates as a complete system as listed in C.2.6 by meeting the first 4 required parameters.

C.5.4 Final Review: NLT 34 months after contract award, Contractor shall demonstrate to the COR at TACOM in Warren MI, that the Robotic Mule meets all 14 of the required performance parameters and resolves all of the interface problems to successfully integrate the subsystems into a functional robotic system.

C.6.0 Deliverables: Reports and Data

C.6.1 Contract Progress Status and Management Reports: The contractor shall submit the reports via email, bi-monthly (6 per year X 3 years = 18 reports) for the technical portion of this report and quarterly for the financial portion, in accordance with data item A001 of CDRL DD Form 1423, Exhibit A.

C.6.2 Draft Design Concept: No later than (NLT) 3 months after contract award, the contractor shall deliver to the COR the draft design concept for the robotic mule as listed in C.2.1. This effort may include sketches, drawings and modeling and simulation. Deliver in accordance with data item A002 of CDRL DD Form 1423, Exhibit A.

C.6.3 Final Technical Report: The contractor shall prepare and deliver a final technical report in accordance with data item A003 of CDRL DD Form 1423, Exhibit A. DD250 is required for the final report and data deliverables C.6.4 - C.6.7 which are required with the final report.

C.6.4 Video: The contractor shall provide the a video of all demonstrations and physical tests with the final report, in accordance with data item A004 of CDRL DD Form 1423, Exhibit A.

C.6.5 Parts List and Final Engineering Design Drawings: The contractor shall deliver a complete parts list for all of the Robotic Mule components and the final engineering design drawings with the final report in accordance with data item A005 of CDRL DD Form 1423, Exhibit A.

C.6.6 Technical Data and Presentation Materials: The contractor shall provide all of the presentation materials, and technical papers generated during this project to the COR with the final report in accordance with data item A006 of CDRL DD Form 1423, Exhibit A. Presentation materials are defined as all products generated to brief the various meetings and demonstrations required for this effort both at the request of the Government or by the contractor of their own accord. They shall include but not be limited to Powerpoint or similar presentations, text documents, still photographs both film and digital, and published technical papers.

C.6.7 Visual Perception Package: The contractor shall deliver the software listed in C.6.7.1 -C.6.7.3 to TACOM no later than (NLT) 36 months after contract award with the final report. Deliver in accordance with data item A007 of CDRL DD Form 1423, Exhibit A.

Deliver to the following address:

US Army TARDEC
6501 E. Eleven Mile Rd.
AMSRD-TAR-R (Mailstop 263)
Warren, MI 48397-5000
Attn: Paul Muench

C.6.7.1 The contractor shall deliver the software for the complete visual perception package includes the machine vision package, processing systems for vision package necessary for operation and interface which is used for the Robotic Mule system.

C.6.7.2 The contractor shall deliver all of the executable software necessary to operate the visual perception package system.

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C.6.7.3 The contractor shall deliver all of the instructions needed regarding how to integrate the machine vision package into the COTS processing computer.

C.7.0 Hardware:
The contractor shall deliver all hardware (including power supplies, motor and interfaces) needed to operate the complete visual perception package. The contractor shall deliver the hardware with the software listed in C.6.7.

*** END OF NARRATIVE C 0001 ***

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SECTION F - DELIVERIES OR PERFORMANCE	SECTION F DELIVERIES OR PERFORMANCE
<p>F.1 <u>Period of Performance</u></p> <p>F.1.1 The work under this contract shall be performed from the date of contract award, for a period of thirty-six (36) months.</p> <p>F.2 Reports and Data</p> <p>F.2.1 The contractor shall submit the Contractor's Progress, Status and Management Report bimonthly (6 per year X 3 years = 18 reports) for the technical portion of this report and quarterly for the financial portion of the report. This report shall be submitted under CLIN 0002 in accordance with data item A001 of CDRL DD1423, Exhibit A.</p> <p>F.2.2 The contractor shall deliver no later than (NLT) 3 months after contract award, the Robotic Mule's draft design concept to the COR for review and concurrence. This deliverable shall consist of drawings and sketches that demonstrates the MUV-R Demonstrator's draft design. This deliverable shall be submitted under CLIN 0002 in accordance with data item A002 of CDRL DD1423, Exhibit A.</p> <p>F.2.3 The Contractor's Draft Final Report shall be submitted under CLIN 0002 to the Government in accordance with data item A003 of CDRL DD1423, Exhibit A. The draft final report is due no later than 34 months after contract award. The COR will review it and return the draft report within 15 days of receipt of the draft with comments to the contractor. The contractor shall submit one final Scientific and Technical Report, incorporating the COR comments is due 30 days after the COR approval of the draft final report. DD 250 is required.</p> <p>F.2.4 The contractor shall deliver a video to the Government, with the final report, in accordance with data item A004 of CDRL DD1423, Exhibit A, under CLIN 0002. DD 250 is required.</p> <p>F.2.5 The contractor shall deliver a complete parts list of all of the Robotic Mule components and the final engineering design drawings with the final report. This deliverable shall be submitted under CLIN 0002 in accordance with data item A005 of CDRL DD1423, Exhibit A. DD 250 is required.</p> <p>F.2.6 The contractor shall deliver all of the technical data and presentation materials that the contractor generated during this effort to the Government, with the final report, in accordance with data item A006 of CDRL DD1423, Exhibit A, under CLIN 0002. DD 250 is required.</p> <p>F.2.7 Visual Perception Package: The contractor shall deliver the items listed in F.2.7.1 - F.2.7.3 to the COR at TACOM in Warren MI, under CLIN 0002. Deliver with the final report, in accordance with data item A007 of CDRL DD1423, Exhibit A. DD 250 is required.</p> <p>F.2.7.1 The software for the complete visual perception package as listed in Section C.6.0 "Deliverables Reports and Data". The complete visual perception package includes the machine vision package, processing systems for vision package, necessary for the operation and interface which is used for the Robotic Mule system.</p> <p>F.2.7.2 All of the software necessary to operate the visual perception package system including all of the necessary software libraries and source code necessary for manipulation of the original software code and for the integration into a COTS processing computer.</p> <p>F.2.7.3 All of the instructions on how to integrate the machine vision package into the COTS processing computer.</p> <p>F.3 Hardware</p> <p>F.3.1 The contractor shall deliver, with the final report, all hardware (including power supplies, motor and interfaces) necessary to operate the complete visual perception package as listed in Section C.7.0 "Hardware".</p> <p>F.4 <u>Deliveries and Shipping</u></p> <p>F.4.1 All drawings and other technical data covered by this contract which have not been previously delivered shall be subject to delivery to the Government upon completion or termination of this contract.</p> <p>F.4.2 All technical data and drawings to be delivered pursuant to this contract, shall contain all COTR approved changes.</p>	

CONTINUATION SHEET	Reference No. of Document Being Continued PIIN/SIIN W56HZV-05-C-0254 MOD/AMD P00004	Page 13 of 19
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Name of Offeror or Contractor: BOSTON DYNAMICS INC.

F.4.3 The Contractor shall be responsible for shipping all hardware, software and technical data that cannot be delivered electronically F.O.B Destination to the following address:

Commander
U.S. Army Tank-automotive & Armaments Command
ATTN: Mr. Paul Muench
AMSRD-TAR-R MS263
Warren, MI 48397-5000

F.4.4 See Section J, List of Attachments, Exhibit A. The electronic deliverables shall be submitted in accordance with Exhibit A, entitled "Contract Data Requirements List"(CDRL) DD 1423.

*** END OF NARRATIVE F 0001 ***

Name of Offeror or Contractor: BOSTON DYNAMICS INC.

SECTION G - CONTRACT ADMINISTRATION DATA

LINE	PRON/ AMS CD/ ITEM MIPR	OBLG STAT/ ACRN JOB ORD NO	PRIOR AMOUNT	INCREASE/DECREASE AMOUNT	CUMULATIVE AMOUNT
0004	R372C070R3 665502M4000	AC 2 72C070	0.00 \$	499,951.70 \$	499,951.70
			NET CHANGE \$	499,951.70	

SERVICE NAME	NET CHANGE BY ACRN	ACCOUNTING CLASSIFICATION	ACCOUNTING STATION	INCREASE/DECREASE AMOUNT
Army	AC	21 72040000076N6N7EP665502255Y S20113	W56HZV	\$ 499,951.70
			NET CHANGE	\$ 499,951.70

	PRIOR AMOUNT OF AWARD	INCREASE/DECREASE AMOUNT	CUMULATIVE OBLIG AMT
NET CHANGE FOR AWARD:	\$ 730,000.00	\$ 499,951.70	\$ 1,229,951.70

ACRN	EDI ACCOUNTING CLASSIFICATION
AC	21 070820400000 S20113 76N6N7E665502M4000255Y 72C070S20113 W56HZV

CONTINUATION SHEET	Reference No. of Document Being Continued		Page 15 of 19
	PIIN/SIIN W56HZV-05-C-0254	MOD/AMD P00004	
Name of Offeror or Contractor: BOSTON DYNAMICS INC.			

SECTION H - SPECIAL CONTRACT REQUIREMENTS

H.1 CONTRACTOR IDENTIFIED DATA HAVING GOVERNMENT PURPOSE RIGHTS.

- H.1.1 The contractor has identified technical data partially developed at private expense now being tendered with Government purpose rights. The data is identified in Attachment 001. This identification is intended to facilitate review of technical data and does not change, waive or otherwise modify the rights of the parties under the DFAR clause 252.227-7018, "Rights in Noncommercial Technical Data and Computer Software--Small Business Innovation Research (SBIR) Program" (Jun 1995).
- H.1.2 The award and issuance of this contract is contingent upon the contractor providing matching funds from outside investors in the amount of \$500,000 for this effort. By entering into this contract, the contractor agrees to provide these matching funds. The contractor's failure to do so will result in termination of this contract.

*** END OF NARRATIVE H 0001 ***

CONTINUATION SHEET	Reference No. of Document Being Continued PIIN/SIIN W56HZV-05-C-0254 MOD/AMD P00004	Page 16 of 19
Name of Offeror or Contractor: BOSTON DYNAMICS INC.		

SECTION I - CONTRACT CLAUSES

52.222-26

Equal Opportunity (Mar 2007)

(a) Definition. United States, as used in this clause, means the 50 States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island.

(b)

(1) If, during any 12-month period (including the 12 months preceding the award of this contract), the Contractor has been or is awarded nonexempt Federal contracts and/or subcontracts that have an aggregate value in excess of \$10,000, the Contractor shall comply with this clause, except for work performed outside the United States by employees who were not recruited within the United States. Upon request, the Contractor shall provide information necessary to determine the applicability of this clause.

(2) If the Contractor is a religious corporation, association, educational institution, or society, the requirements of this clause do not apply with respect to the employment of individuals of a particular religion to perform work connected with the carrying on of the Contractors activities (41 CFR 60-1.5).

(c)

(1) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. However, it shall not be a violation of this clause for the Contractor to extend a publicly announced preference in employment to Indians living on or near an Indian reservation, in connection with employment opportunities on or near an Indian reservation, as permitted by 41 CFR 60-1.5.

(2) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. This shall include, but not be limited to --

(i) Employment;(ii) Upgrading;(iii) Demotion;(iv) Transfer;(v) Recruitment or recruitment advertising;(vi) Layoff or termination;(vii) Rates of pay or other forms of compensation; and(viii) Selection for training, including apprenticeship.

(3) The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer that explain this clause.

(4) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(5) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers representative of the Contractors commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.

(6) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.

(7) The Contractor shall furnish to the contracting agency all information required by Executive Order 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor. The Contractor shall also file Standard Form 100 (EEO-1), or any successor form, as prescribed in 41 CFR part 60-1. Unless the Contractor has filed within the 12 months preceding the date of contract award, the Contractor shall, within 30 days after contract award, apply to either the regional Office of Federal Contract Compliance Programs (OFCCP) or the local office of the Equal Employment Opportunity Commission for the necessary forms.

(8) The Contractor shall permit access to its premises, during normal business hours, by the contracting agency or the (OFCCP) for the purpose of conducting on-site compliance evaluations and complaint investigations. The Contractor shall permit the Government to inspect and copy any books, accounts, records (including computerized records), and other material that may be relevant to the matter under investigation and pertinent to compliance with Executive Order 11246, as amended, and rules and regulations that implement the Executive Order.

(9) If the OFCCP determines that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts, under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended, in the rules, regulations, and orders of the Secretary of Labor, or as otherwise provided by law.

CONTINUATION SHEET	Reference No. of Document Being Continued PIIN/SIIN W56HZV-05-C-0254 MOD/AMD P00004	Page 17 of 19
Name of Offeror or Contractor: BOSTON DYNAMICS INC.		

(10) The Contractor shall include the terms and conditions of this clause in every subcontract or purchase order that is not exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor.

(11) The Contractor shall take such action with respect to any subcontract or purchase order as the contracting officer may direct as a means of enforcing these terms and conditions, including sanctions for noncompliance; provided, that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of any direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

(d) Notwithstanding any other clause in this contract, disputes relative to this clause will be governed by the procedures in 41 CFR 60-1.1.

(End of Clause)

*** END OF NARRATIVE I 0001 ***

52.244-6

Subcontracts for Commercial Items (Mar 2007)

(a) Definitions. As used in this clause--

Commercial item has the meaning contained Federal Acquisition Regulation 2.101, Definitions.

Subcontract includes a transfer of commercial items between divisions, subsidiaries, or affiliates of the Contractor or subcontractor at any tier.

(b) To the maximum extent practicable, the Contractor shall incorporate, and require its subcontractors at all tiers to incorporate, commercial items or nondevelopmental items as components of items to be supplied under this contract.

(c)

(1) The Contractor shall insert the following clauses in subcontracts for commercial items:

(i) 52.219-8, Utilization of Small Business Concerns (May 2004) (15 U.S.C. 637(d)(2)(3)), in all subcontracts that offer further subcontracting opportunities. If the subcontract (except subcontracts to small business concerns) exceed \$550,000 (\$1,000,000 for construction of any public facility), the subcontractor must include 52.219-8 in lower tier subcontracts that offer subcontracting opportunities.

(ii) 52.222-26, Equal Opportunity (Mar 2007) (E.O. 11246).

(iii) 52.222-35, Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans (Sep 2006) (38 U.S.C. 4212(a));

(iv) 52.222-36, Affirmative Action for Workers with Disabilities (Jun 1998) (29 U.S.C. 793).

(v) 52.222-39, Notification of Employee Rights Concerning Payment of Union Dues or Fees (Dec 2004) (E.O. 13201). (Flow down a required in accordance with paragraph (g) of FAR clause 52.222-39.)

(vi) 52.247-64, Preference for Privately Owned U.S.-Flag Commercial Vessels (Feb 2006) (46 U.S.C. Appx 1241 and 10 U.S.C. 2631) (flow down required in accordance with paragraph (d) of FAR clause 52.247-64).

(2) While not required, the Contractor may flow down to subcontracts for commercial items a minimal number of additional clauses necessary to satisfy its contractual obligations.

(d) The Contractor shall include the terms of this clause, including this paragraph (d), in subcontracts awarded under this contract.

(End of Clause)

CONTINUATION SHEET	Reference No. of Document Being Continued PIIN/SIIN W56HZV-05-C-0254 MOD/AMD P00004	Page 18 of 19
Name of Offeror or Contractor: BOSTON DYNAMICS INC.		

*** END OF NARRATIVE I 0002 ***

CONTINUATION SHEET	Reference No. of Document Being Continued		Page 19 of 19
	PIIN/SIIN W56HZV-05-C-0254	MOD/AMD P00004	
Name of Offeror or Contractor: BOSTON DYNAMICS INC.			

SECTION J - LIST OF ATTACHMENTS

<u>List of</u> <u>Addenda</u>	<u>Title</u>	<u>Date</u>	<u>Number</u> <u>of Pages</u>	<u>Transmitted By</u>
Exhibit A	CONTRACT DATA REQUIREMENTS LIST	24-OCT-2006	009	EMAIL

CONTRACT DATA REQUIREMENT LIST

Form Approval OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 440 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503. Please DO NOT RETURN your form to either these addresses. Send completed form to the Government Issuing Contracting Officer for the Contract/PR No. listed in Block E.

A. CONTRACT LINE ITEM NO.: 0002

B. EXHIBIT: A

C. CATEGORY: Deliverables

D. SYSTEM/ITEM: Legged Robotic Mule

E. CONTRACT NO. W56HZV-05-C-0254

F. CONTRACTOR: Boston Dynamics

1. DATA ITEM NO.: A001

2. TITLE OF DATA ITEM.: Contract Progress Status Reports & Management Reports

3. SUBTITLE :

4. AUTHORITY: DI-MGMT-80227

5. CONTRACT REFERENCE: C.6.0

6. REQUIRING OFFICE...: AMSTA-TAR-R ST. STATEMENT REQUIRED.: 12. DATE OF FIRST SUB.: See Block 16

7. DD250....: NOT REQUIRED 10. FREQUENCY.....: See Block 16

8. APP CODE.....: 11. AS OF DATE.....: See Block 16

13. DATE OF SUBS. SUB.: See Block 16

14. DISTRIBUTION

A. ADDRESSEES

B. COPIES: Draft FINAL

Mr. Paul Muench, Contracting Officer's Rep(COR), E-mail: paul.muench@us.army.mil

1

1

Mr. Michael Chaney, Contract Specialist, E-mail: michael.r.chaney@us.army.mil

1

Cognizant ACO, email: TBD

1

TOTAL: 1 3

Mailing address:

U. S. Army Tank-automotive and Armaments Command

ATTN: Mr. Paul Muench

AMSRD-TAR-R, Mail Stop 263

Building 200A

6501 E. 11 Mile Road

Warren, MI 48397-5000

16. a. REMARKS: The contractor shall submit the reports via email, bi-monthly (6 per year X 3 years = 18 reports) for the technical portion of this report and quarterly for the financial portion. The bimonthly progress portion of the report shall summarize the work completed to date on the contract with specific reference to the contract tasks completed, tasks not completed, and significant accomplishments of the project. The report shall also inform the Government of existing or potential problem areas and solutions to any issues brought up during meetings referenced in Section C.5 of the contract. The financial part of this deliverable will summarize and report total costs incurred to date, with specific reference to the costs incurred since the last status report. The quarterly status reports shall also summarize the amount of money spent that quarter on hardware, design, technical personnel hours, program management personnel hours and software products purchased and predict the spending rate for the next quarter and compare this to project estimates for the overall contract duration.

b. Complete the reports in accordance with (IAW) Data Item Description (DID) DI-MGMT-80227, "Contractor's Progress, Status, and Management Report." The COR is responsible for accepting or rejecting the "Contractor's Progress, Status, and Management Reports." See DID DI-MGMT-80227, at the Internet address below, for instructions on completing the required report.

<http://astimage.daps.dla.mil/docimages/0001\48\17\DI80227.PD8>

c. Prepare the reports in the Contractor's format. Submit the reports using any of the following electronic formats:

(1) Files readable using these Microsoft* 2000 Office Products (TACOM can currently read OFFICE 2000* and lower): Word, Excel, PowerPoint, or Access. Spreadsheets must be sent in a file format that includes all formulae, macro and format information. Print image is not acceptable. Executable files, other than self-extracting compressed files, are unacceptable.

(2) Files in Adobe PDF (Portable Document Format). Scanners should be set to 200 dots per inch.

(3) Files in HTML (Hypertext Markup Language). HTML documents must not contain active links to live Internet sites or pages. All linked information must be contained within your electronic report, and be accessible offline.

(4) Other electronic formats. Before preparing your report in any other electronic format, please e-mail the COR, with an e-mail copy-furnished to amsta-idq@tacom.army.mil, to obtain a decision as to the format's acceptability. This e-mail must be received by the COR not later than ten calendar days before the draft report's due date. All alternate methods must be a no cost to the Government.

NOTES: Files may be read-only, password protected.

d. Acceptable media: The Contractor shall submit reports via e-mail. If e-mail is not workable, other acceptable media is 700 megabyte CD-ROM. Identify the software application and version used to create each file submitted.

(1) E-MAIL. Maximum size of each e-mail message shall be three and one-half (3.5) megabytes. You may use multiple e-mail messages if necessary, however, you must annotate the subject lines in this manner: "Message 1 of 3, 2 of 3, 3 of 3."

(2) 700 MEGABYTE CD ROM via U.S. Mail or other carrier. The Contractor shall label and all submitted CDs with the Contract number, the Contractor's name, address and a contact's phone number.

NOTE: Please select only one medium by which to transmit each report. For instance, do not submit a report via e-mail and 700 megabyte CD ROM.

17. PRICE GROUP:

18. ESTIMATED TOTAL PRICE :

1. DATA ITEM NO.: A002
2. TITLE OF DATA ITEM.: Draft Design Concept
3. SUBTITLE :
4. AUTHORITY: N/A
5. CONTRACT REFERENCE: C.6.0
6. REQUIRING OFFICE...: AMSTA-TAR-R ST. STATEMENT REQUIRED.:
7. DD250....: NOT REQUIRED 8. APP CODE.....:

10. FREQUENCY.....: See Block 16

11. AS OF DATE.....: See Block 16

12. DATE OF FIRST SUB.: See Block 16

13. DATE OF SUBS. SUB.: See Block 16

14. DISTRIBUTION A. ADDRESSEES B. COPIES: Draft FINAL

Mr. Paul Muench, Contracting Officer's Rep(COR),E-mail: paul.muench@us.army.mil 1 1
Mr. Michael Chaney, Contract Specialist, E-mail:michael.r.chaney@us.army.mil
Cognizant ACO, E-mail: TBD

16. REMARKS:

a. The contractor shall deliver the Robotic Mule draft design concept to the Government no later than 3 months after contract award. This deliverable may include sketches, drawings, modeling and simulation as described in C.6.

b. Prepare the reports in the Contractor's format. Submit the reports using any of the following electronic formats:

(1) Files readable using these Microsoft* 2000 Office Products (TACOM can currently read OFFICE 2000* and lower): Word, Excel, PowerPoint, or Access. Spreadsheets must be sent in a file format that includes all formulae, macro and format information. Print image is not acceptable.

(2) Files in Adobe PDF (Portable Document Format). Scanners should be set to 200 dots per inch.

(3) Files in HTML (Hypertext Markup Language). HTML documents must not contain active links to live Internet sites or pages. All linked information must be contained within your electronic report, and be accessible offline.

(4) Other electronic formats. Before preparing your report in any other electronic format, please e-mail the COR, with an e-mail copy-furnished to amsta-idq@tacom.army.mil, to obtain a decision as to the format's acceptability. This e-mail must be received by the COR not later than ten calendar days before the draft report's due date. All alternate methods must be a no cost to the Government.

NOTES: Files may be read-only, password protected.

c. Acceptable media: The Contractor shall submit reports via e-mail. If e-mail is not workable, other acceptable media is 700 megabyte CD-ROM. Identify the software application and version used to create each file submitted.

(1) E-MAIL. Maximum size of each e-mail message shall be three and one-half (3.5) megabytes. You may use multiple e-mail messages if necessary, however, you must annotate the subject lines in this manner: "Message 1 of 3, 2 of 3, 3 of 3."

(2) 700 MEGABYTE CD ROM via U.S. Mail or other carrier. The Contractor shall label and all submitted CDs with the Contract number, the Contractor's name, address and a contact's phone number.

NOTE: Please select only one medium by which to transmit each report. For instance, do not submit a report via e-mail and 700 megabyte CD ROM.

17. PRICE GROUP:

18. ESTIMATED TOTAL PRICE

1. DATA ITEM NO.: A003
2. TITLE OF DATA ITEM.: Scientific and Technical Report
3. SUBTITLE :
4. AUTHORITY: DI-MISC-80711A
5. CONTRACT REFERENCE: C.6.0
6. REQUIRING OFFICE...: AMSTA-TAR-R ST. STATEMENT REQUIRED.:
7. DD250....: REQUIRED 10. FREQUENCY.....: See Block 16
8. APP CODE.....: 11. AS OF DATE.....: See Block 16
12. DATE OF FIRST SUB.: See Block 16
13. DATE OF SUBS. SUB.: See Block 16

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES: Draft	FINAL
Mr. Paul Muench, COR,E-mail: henry.andrusz@us.army.mil		1	1
Mr. Michael Chaney, Contract Specialist, E-mail:michael.r.chaney@us.army.mil		1	1
Cognizant ACO, E-mail: TBD		1	1
		TOTAL:	3 3

16. a. REMARKS: Contractor shall provide a draft final report that contain the results of the subtasks performance under C.2 of the Scope of Work of the contract) and a summary of the results of the project. The draft final report shall be provided to the COR no later than (NLT) 34 months after the date of contract award, via email. Allow 15 days for the Government to review and comment on the draft final report. The final report, incorporating the COR's comments is due 30 days after the COR approval of the draft final report. The contractor shall also deliver the following hardware and software with the final report. DD250 is required.

(1) Visual Perception Package, all of the executable software necessary to operate the visual perception package system and all of the instructions needed regarding how to integrate the machine vision package into the COTS processing computer in accordance with data item A007 of CDRL DD Form 1423, Exhibit A.

(2) Technical Data and Presentation Materials in accordance with data item A006 of CDRL DD Form 1423, Exhibit A.

(3) A complete parts list for all of the components and the final engineering design drawings for the Robotic Mule in accordance with data item A005 of CDRL DD Form 1423, Exhibit A.

(4) A Video of all demonstrations and physical tests in accordance with data item A004 of CDRL DD Form 1423, Exhibit A.

b. Complete the reports in accordance with (IAW) Data Item Description (DID) DI-MGMT-80227, "Contractor's Progress, Status, and Management Report." The COR is responsible for accepting or rejecting the "Contractor's Progress, Status, and Management Reports." See DID DI-MGMT-80227, at the Internet address below, for instructions on completing the required report.

<http://astimage.daps.dla.mil/docimages/0001\48\17\DI80227.PD8>

c. Prepare the reports in the Contractor's format. Submit the reports using any of the following electronic formats:

(1) Files readable using these Microsoft* 2000 Office Products (TACOM can currently read OFFICE 2000* and lower): Word, Excel, PowerPoint, or Access. Spreadsheets must be sent in a file format that includes all formulae, macro and format information. Print image is not acceptable. Executable files, other than self-extracting compressed files, are unacceptable.

(2) Files in Adobe PDF (Portable Document Format). Scanners should be set to 200 dots per inch.

(3) Files in HTML (Hypertext Markup Language). HTML documents must not contain active links to live Internet sites or pages. All linked information must be contained within your electronic report, and be accessible offline.

(4) Other electronic formats. Before preparing your report in any other electronic format, please e-mail the COR, with an e-mail copy-furnished to amsta-idq@tacom.army.mil, to obtain a decision as to the format's acceptability. This e-mail must be received by the COR not later than ten calendar days before the draft report's due date. All alternate methods must be a no cost to the Government.

NOTES: Files may be read-only, password protected.

d. Acceptable media: The Contractor shall submit reports via e-mail. If e-mail is not workable, other acceptable media is 700 megabyte CD-ROM. Identify the software application and version used to create each file submitted.

(1) E-MAIL. Maximum size of each e-mail message shall be three and one-half (3.5) megabytes. You may use multiple e-mail messages if necessary, however, you must annotate the subject lines in this manner: "Message 1 of 3, 2 of 3, 3 of 3."

(2) 700 MEGABYTE CD ROM via U.S. Mail or other carrier. The Contractor shall label and all submitted CDs with the Contract number, the Contractor's name, address and a contact's phone number.

NOTE: Please select only one medium by which to transmit each report. For instance, do not submit a report via e-mail and 700 megabyte CD ROM.

17. PRICE GROUP:

18. ESTIMATED TOTAL PRICE :

1. DATA ITEM NO.: A004
2. TITLE OF DATA ITEM.: Video
3. SUBTITLE :
4. AUTHORITY:
5. CONTRACT REFERENCE: C.6.0
6. REQUIRING OFFICE...: AMSTA-TAR-R ST. STATEMENT REQUIRED.:
7. DD250....: REQUIRED 10. FREQUENCY.....: See Block 16
8. APP CODE.....: 11. AS OF DATE.....: See Block 16
12. DATE OF FIRST SUB.: See Block 16
13. DATE OF SUBS. SUB.: See Block 16

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES: Draft	FINAL
Mr. Paul Muench, Contracting Officer's Rep(COR),E-mail: Paul.muench@us.army.mil		1	1
Mr. Michael Chaney, Contract Specialist, E-mail:michael.r.chaney@us.army.mil			
Cognizant ACO, E-mail: TBD			
TOTAL:		1	1

16. a. REMARKS: The contractor shall provide video footage of all demonstrations and physical tests. The content of the video shall include at a minimum a view of the Legged Robotic Mule operator control unit, the Legged Robotic Mule system in motion, and any preparatory work necessary immediately prior to the demonstration or physical test. The frequency of this deliverable is once, with the final report.

b. Acceptable media: The Contractor shall submit reports via e-mail. If e-mail is not workable, other acceptable media is 700 megabyte CD-ROM. Identify the software application and version used to create each file submitted.

17. PRICE GROUP: 18. ESTIMATED TOTAL PRICE :

1. DATA ITEM NO.: A005
2. TITLE OF DATA ITEM.: Drawings: Engineering and Associated Lists
3. SUBTITLE :
4. AUTHORITY: N/A
5. CONTRACT REFERENCE: C.6.0
6. REQUIRING OFFICE...: AMSTA-TAR-R ST. STATEMENT REQUIRED.:
7. DD250.... : REQUIRED 8. APP CODE.....:

10. FREQUENCY.....: See Block 16

11. AS OF DATE.....: See Block 16

12. DATE OF FIRST SUB.: See Block 16

13. DATE OF SUBS. SUB.: See Block 16

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES: Draft	FINAL
Mr. Paul Muench, COR, E-mail: paul.muench@us.army.mil		1	1
Mr. Michael Chaney, Contract Specialist, E-mail:michael.r.chaney@us.army.mil			1
Cognizant ACO, E-mail: TBD			
		TOTAL: 1	1

16. REMARKS:

a. The contractor shall prepare and deliver a complete parts list for all of the components and the final engineering design drawings for the Robotic Mule. The frequency of this deliverable shall be once, with the final report.

b. Prepare the reports in the Contractor's format. Submit the reports using any of the following electronic formats:

(1) Files readable using these Microsoft* 2000 Office Products (TACOM can currently read OFFICE 2000* and lower): Word, Excel, PowerPoint, or Access. Spreadsheets must be sent in a file format that includes all formulae, macro and format information. Print image is not acceptable.

(2) Files in Adobe PDF (Portable Document Format). Scanners should be set to 200 dots per inch.

(3) Files in HTML (Hypertext Markup Language). HTML documents must not contain active links to live Internet sites or pages. All linked information must be contained within your electronic report, and be accessible offline.

(4) Other electronic formats. Before preparing your report in any other electronic format, please e-mail the COR, with an e-mail copy-furnished to amsta-idq@tacom.army.mil, to obtain a decision as to the format's acceptability. This e-mail must be received by the COR not later than ten calendar days before the draft report's due date. All alternate methods must be a no cost to the Government.

NOTES: Files may be read-only, password protected.

c. Acceptable media: The Contractor shall submit reports via e-mail. If e-mail is not workable, other acceptable media is a 700 megabyte CD-ROM. Identify the software application and version used to create each file submitted.

(1) E-MAIL. Maximum size of each e-mail message shall be three and one-half (3.5) megabytes. You may use multiple e-mail messages if necessary, however, you must annotate the subject lines in this manner: "Message 1 of 3, 2 of 3, 3 of 3."

(2) 700 MEGABYTE CD ROM via U.S. Mail or other carrier. The Contractor shall label and all submitted CDs with the Contract number, the Contractor's name, address and a contact's phone number.

NOTE: Please select only one medium by which to transmit each report. For instance, do not submit a report via e-mail and 700 megabyte CD ROM.

17. PRICE GROUP:

18. ESTIMATED TOTAL PRICE :

1. DATA ITEM NO.: A006
 2. TITLE OF DATA ITEM.: Technical Data and Presentation Materials
 3. SUBTITLE :
 4. AUTHORITY: N/A
 5. CONTRACT REFERENCE: C.6.0
 6. REQUIRING OFFICE...: AMSTA-TAR-R ST. STATEMENT REQUIRED.:
 7. DD250.... : REQUIRED 10. FREQUENCY.....: See Block 16
 8. APP CODE.....: 11. AS OF DATE.....: See Block 16

12. DATE OF FIRST SUB.: See Block 16

13. DATE OF SUBS. SUB.: See Block 16

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES: Draft	FINAL
Mr. Paul Muench, COR, E-mail: paul.muench@us.army.mil		1	1
Mr. Michael Chaney, Contract Specialist, E-mail: michael.r.chaney@us.army.mil			1
Cognizant ACO, E-mail: TBD			
		TOTAL: 1	1

16. REMARKS:

a. The contractor shall provide all of the presentation materials, and technical papers generated during this project to the COR with the final report. Presentation materials are defined as all products generated to brief the various meetings and demonstrations required for this effort both at the request of the Government and data that contractor developed on his own accord. They shall include but not be limited to powerpoint or similar presentations, text documents, still photographs both film and digital, and published technical papers. The frequency of the deliverable is once with the final report.

b. Prepare the reports in the Contractor's format. Submit the reports using any of the following electronic formats:

(1) Files readable using these Microsoft* 2000 Office Products (TACOM can currently read OFFICE 2000* and lower): Word, Excel, PowerPoint, or Access. Spreadsheets must be sent in a file format that includes all formulae, macro and format information. Print image is not acceptable.

(2) Files in Adobe PDF (Portable Document Format). Scanners should be set to 200 dots per inch.

(3) Files in HTML (Hypertext Markup Language). HTML documents must not contain active links to live Internet sites or pages. All linked information must be contained within your electronic report, and be accessible offline.

(4) Other electronic formats. Before preparing your report in any other electronic format, please e-mail the COR, with an e-mail copy-furnished to amsta-idq@tacom.army.mil, to obtain a decision as to the format's acceptability. This e-mail must be received by the COR not later than ten calendar days before the draft report's due date. All alternate methods must be a no cost to the Government.

NOTES: Files may be read-only, password protected.

c. Acceptable media: The Contractor shall submit reports via e-mail. If e-mail is not workable, other acceptable media is 700 megabyte CD-ROM. Identify the software application and version used to create each file submitted.

(1) E-MAIL. Maximum size of each e-mail message shall be three and one-half (3.5) megabytes. You may use multiple e-mail messages if necessary, however, you must annotate the subject lines in this manner: "Message 1 of 3, 2 of 3, 3 of 3."

(2) 700 MEGABYTE CD ROM via U.S. Mail or other carrier. The Contractor shall label and all submitted CDs with the Contract number, the Contractor's name, address and a contact's phone number.

NOTE: Please select only one medium by which to transmit each report. For instance, do not submit a report via e-mail and 700 megabyte CD ROM.

17. PRICE GROUP: 18. ESTIMATED TOTAL PRICE

1. DATA ITEM NO.: A007
 2. TITLE OF DATA ITEM.: Visual Perception Package
 3. SUBTITLE :
 4. AUTHORITY: N/A
 5. CONTRACT REFERENCE: C.6.0
 6. REQUIRING OFFICE...: AMSTA-TAR-R ST. STATEMENT REQUIRED.:

7. DD250.... : REQUIRED 10. FREQUENCY.....: See Block 16
8. APP CODE.....: 11. AS OF DATE.....: See Block 16
12. DATE OF FIRST SUB.: See Block 16
13. DATE OF SUBS. SUB.: See Block 16

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES:	Draft	FINAL
Mr. Paul Muench, Contracting Officer's Rep(COR),E-mail: paul.muench@us.army.mil		1	1	
Mr. Michael Chaney, Contract Specialist, E-mail:michael.r.chaney@us.army.mil				1
Cognizant ACO, E-mail: TBD				
		TOTAL:	1	1

16. REMARKS: a. The contractor shall deliver all of the software needed to operate the complete visual perception package to TACOM in Warren MI with the final report. The software for the complete visual perception package includes the machine vision package and the processing systems for the vision package necessary for operation and interface which is used for the Robotic Mule system. The contractor shall deliver all executable software necessary to operate the complete visual perception package system. Also, as part of this package, the contractor is required to deliver the instructions on how to integrate the machine vision package into the COTS processing computer.

b. Prepare the reports in the Contractor's format. Submit the reports using any of the following electronic formats:

(1) Files readable using these Microsoft* 2000 Office Products (TACOM can currently read OFFICE 2000* and lower): Word, Excel, PowerPoint, or Access. Spreadsheets must be sent in a file format that includes all formulae, macro and format information. Print image is not acceptable.

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